

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:
using a processor to receive[[ing]] a sensor signal comprising a raw sensor value from a sensor, the raw sensor value associated with a position of a manipulandum in a range of motion;
using a processor to calculate[[ing]] an adjusted sensor value based at least in part on the raw sensor value and a compliance between the sensor and the manipulandum; and
using a processor to output[[ting]] an output signal comprising the adjusted sensor value.
2. (Currently Amended) ~~The A-method of as recited in claim 1~~, wherein the compliance is associated with a compliance constant and a current output force.
3. (Currently Amended) ~~The A-method of as recited in claim 1~~, further comprising using a processor to determine[[ing]] a closed-loop position-dependent force based at least in part on the raw sensor value.
4. (Currently Amended) ~~The A-method of as recited in claim 1~~, further comprising transmitting forces from an actuator to the manipulandum with a belt drive.
5. (Currently Amended) ~~The A-method of as recited in claim 1~~, further comprising using a processor to filter[[ing]] the raw sensor value for overshoot sensor values occurring at limits to the range of motion of the manipulandum.
6. (Currently Amended) ~~The A-method of as recited in claim 1~~, further comprising using a processor to calibrate[[ing]] the range of motion of the manipulandum by adjusting minimum and maximum values of the range of motion based at least in part on an ~~the~~ extent of motion of the manipulandum up to a designated time.

7. (Currently Amended) ~~The A-method of as recited in~~ claim 1, further comprising using a processor to normalize[[ing]] the raw sensor value to a normalized range of motion, wherein the adjusted sensor value is further associated with the normalized raw sensor value.
8. (Previously Presented) A device comprising:
a manipulandum;
a linkage mechanism providing a degree of freedom to the manipulandum;
a sensor operable to sense a position of the manipulandum in the degree of freedom and to output a raw sensor value representing the position; and
a processor, operable to:
 receive a sensor signal from the sensor, the sensor signal comprising the raw sensor value;
 calculate an adjusted sensor value based at least in part on the raw sensor value and a compliance between the sensor and the manipulandum; and
 output an output signal comprising the adjusted sensor value.
9. (Currently Amended) ~~The A-device of as recited in~~ claim 8, wherein the linkage mechanism includes a chain of four rotatably-coupled members coupled to ground at each end of the chain.
10. (Currently Amended) ~~The A-device of as recited in~~ claim 8, further comprising an actuator coupled to the linkage mechanism, ~~the actuator operative to output a force in the degree of freedom.~~
11. (Currently Amended) ~~The A-device of as recited in~~ claim 9, further comprising a belt drive transmission coupled between the actuator and the linkage mechanism.
12. (Currently Amended) ~~The A-device of as recited in~~ claim 8, wherein the sensor comprises a relative digital encoder.

13. (Currently Amended) ~~The A-device of as recited in claim 8~~, wherein the sensor is coupled to the actuator such that the sensor is operable to detect rotation of a shaft of the actuator.

14. (Currently Amended) ~~The A-device of as recited in claim 8~~, wherein the processor is operable to calibrate ~~a the~~ range of motion of the manipulandum by adjusting minimum and maximum values of the range of motion based at least in part on ~~an the~~ extent of motion of the manipulandum up to a designated time.

15. (Currently Amended) ~~The A-device of as recited in claim 8~~ wherein the processor is operable to determine a closed-loop force based at least in part on the raw sensor value.

16-32. (Cancelled)

33. (Currently Amended) A non-transitory computer-readable medium on which is program code configured to processor to execute a method comprising:

receiving a sensor signal comprising a raw sensor value from a sensor, the raw sensor value associated with a position of a manipulandum in a range of motion;

calculating an adjusted sensor value based at least in part on the raw sensor value and a compliance between the sensor and the manipulandum; and

outputting an output signal comprising the adjusted sensor value.

34. (Currently Amended) ~~The non-transitory computer-readable medium A method of as recited in claim 33~~, wherein the compliance is associated with a compliance constant and a current output force.

35. (Currently Amended) ~~The non-transitory computer-readable medium A method of as recited in claim 33~~, further comprising determining a closed-loop position-dependent force based at least in part on the raw sensor value.

36. (Currently Amended) The non-transitory computer-readable medium A-method-of as recited in claim 33, further comprising transmitting forces from an actuator to the manipulandum with a belt drive.

37. (Currently Amended) The non-transitory computer-readable medium A-method-of as recited in claim 33, further comprising filtering the raw sensor value for overshoot sensor values occurring at limits to the range of motion of the manipulandum.

38. (Currently Amended) The non-transitory computer-readable medium A-method-of as recited in claim 33, further comprising calibrating the range of motion of the manipulandum by adjusting minimum and maximum values of the range of motion based at least in part on a the extent of motion of the manipulandum up to a designated time.